

### **Abstract of the Disclosure**

An emissive electrode insert formed from an alloy containing hafnium and zirconium. The insert typically contains at least about 80% hafnium by weight and about 0.1 to about 8% zirconium by weight. The invention also relates to a plasma torch electrode formed from an electrode body with a cavity into which such an emissive insert is fitted, to a plasma torch utilizing such an electrode, and to a plasma cutting process for cutting a steel workpiece, in which such a plasma torch is employed.